

## OBSERVATIONS

ON THE

## PRESERVATION OF HEARING,

AND ON

The Choice, Use, and Abuse

OF

HEARING-TRUMPETS, &amp;c.

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Ο ΕΧΩΝ ΩΤΑ ΑΚΟΥΕΙΝ, ΑΚΟΥΕΤΩ.

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BY

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## PREFACE.

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THE favourable reception my little work on the Preservation of Sight has met with, and the large impression that has been exhausted in a few months, has induced me to follow it by a work on the Ear in a similar manner. Though many are of opinion that it is *infra dignitatem* in an author to abridge his own productions; yet, as my object is to do good, by giving useful advice to those who have neither time nor inclination to study more elaborate works, I shall not allow such a consideration to influence me. Were it necessary, however, to cite precedents in defence of this measure, we have only to look to Germany—a country con-

fessedly among the foremost in literature and science—where it is a frequent practice of learned and scientific men to publish *Abkürzungen*, or abridgements of their important works, for the benefit of the more general public.

That this little work may answer the end proposed, and thereby help to diminish the mass of human suffering and inconvenience, is my earnest wish.

JOHN HARRISON CURTIS.

2, Soho Square, July 24th, 1834.

# CONTENTS.

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	PAGE
Division of Medical Labour, its Advantages . . . .	7
Acoustic Surgery much neglected . . . . .	11
Connexion of Diseases of the Ear and Eye . . . .	ib.
Both curable by the same Means . . . . .	ib.
Anatomy of the Human Ear . . . . .	13
Value of Hearing to Man . . . . .	15
Parts essential to its perfect exercise . . . . .	16
Anecdote of Dionysius, the Tyrant of Syracuse . .	17
Physiology of Hearing . . . . .	ib.
Uses of the Ear to Animals . . . . .	18
Diseases of the Ear:—Otorrhœa, Otitis, Herpetic Eruption, Nervous Deafness, Tinnitus Aurium, Disease of the Auditory Nerve, &c. . . . .	19—37
Influence of the Great Sympathetic Nerve on the Or- gans of Hearing and Sight . . . . .	25
Deafness:—from Negligence, hardened Cerumen, Worms, obstructed Eustachian Tube, Sea-bathing, Blows on the Head, Fright, &c. . . . .	25—32
Cautions to Mothers in cases of Deafness and Dumb- ness . . . . .	31
Deaf and dumb Children should be tested before being pronounced incurable . . . . .	ib.
Prejudicial Effects of warm Night-caps . . . . .	ib.
Insufficient Dress of Ladies . . . . .	32

	PAGE
Frequency of Deafness in this Country, particularly among the Higher Classes . . . . .	33
Incipient Deafness curable . . . . .	34
Great Importance of early Treatment . . . . .	ib.
Nostrums . . . . .	ib.
Cautions how to avoid Deafness . . . . .	36
Foreign Bodies in the Ear . . . . .	ib.
Observations on the Deaf and Dumb . . . . .	38
Number of deaf and dumb Persons in Europe . . . .	41
Remarks on the Royal Dispensary for Diseases of the Ear . . . . .	43
The Acoustic Chair, its Advantages and great Capabilities . . . . .	45
Ear-Trumpet of Aristotle . . . . .	47
————— with Two Apertures . . . . .	ib.
————— small Tin one, invented by Don Consul Jovis, at Cadiz . . . . .	48
Superiority of long Ear-Trumpets . . . . .	ib.
Pocket Hearing-Trumpet . . . . .	49
Acoustic Tubes made at Amsterdam . . . . .	ib.
Novel Acoustic and Optical Invention . . . . .	50
Caoutchouc Instrument newly invented by the Author	ib.
French and German Artificial Ears . . . . .	51
Directions for the Choice of Trumpets . . . . .	52
Tin Trumpets preferable to all others . . . . .	ib.
Deaf Persons should not regard the Appearance of a Trumpet . . . . .	ib.
The most unsightly Trumpets often the best . . . .	ib.
On the Use and Abuse of Trumpets . . . . .	53

ON THE  
PRESERVATION OF HEARING,  
AND ON THE  
Choice, Use, and Abuse of Ear-Trumpets,  
&c. &c.

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I SHALL introduce my subject by a few remarks on the division of medical labour—a point that has frequently been discussed; but the advantages of which many seem still inclined to doubt. I think it will be sufficiently evident, however, on a little reflection, that the man who devotes all the energies of his mind to one pursuit, will thus acquire an intuitive knowledge, which cannot be explained in words, or conveyed by signs:—witness the wonderful performance of the

Prince of Violinists, as an exemplification of this remark.

Few, I apprehend, will deny that surgery has been greatly benefited by being separated from medicine; for, in an art where manual dexterity is absolutely essential to the safe and expeditious performance of difficult operations, every one must perceive that such dexterity can be acquired only by daily practice. The surgeon was originally merely the servant of the physician. Medicine, in early times, was chiefly practised by the ministers of religion; and, as the sacerdotal character did not permit them to have connexion with blood, the surgeon was called in as their attendant, to perform those operations with which the sacredness of their functions did not allow them to interfere. Thus, the first step towards improvement was, the practice of surgery getting into the hands of the laity, and being exercised as a distinct profession.

Surgery has since been subdivided into smaller branches, with much benefit to the



community. Who has not heard of the difference between dental surgery now and what it was fifty years ago? Then, if a tooth were lost, the countenance was probably disfigured, or the speech impeded, for life.\* Now, one or a dozen may be supplied in such a manner as to assist in mastication, and hardly to be known, even by the wearer, from his natural teeth. In the art of tooth-drawing equally great improvements have been made; and the sufferer from tooth-ache has now no reason to defer extraction from the fear of thereby increasing the evil.

Another subdivision in surgery was the

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\* The teeth are essential to the appearance and symmetry of the countenance; without them, that contour and harmony of features which the face ought to possess are wanting: yet they are liable to more speedy decay than the other parts of the body, from their greater exposure to external causes, which act upon and destroy their enamel and osseous substance. When deprived of the teeth, not only is the beauty of the visage impaired, but the food being no longer sufficiently comminuted, digestion is imperfectly performed, and stomach complaints, with a decay of general health, are too often the consequence. .

department of the aurist;\* and here I trust I may without vanity refer to my own works and my own practice, as evidences that the public have reaped advantage from my almost exclusive study of the ear. Until I turned my attention to it, little had been effected for diseases of that organ: indeed, nothing but a love of the science, a desire of relieving my afflicted fellow-creatures, and a determination not to be baffled in my pursuit, could have induced me to persevere as I have done for the last twenty years. Mr. Saunders, after bestowing considerable

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\* The first author among the French who treated the ear scientifically was Duverney; his work appeared in 1683: but the earliest printed book on the anatomy of the ear that I have seen, is by Julius Casserius, a Paduan, published in 1600, and entitled *De Vocis Auditusque Organis Historia Anatomica*, containing numerous fine plates. It shews that, since his time, little additional information has been obtained on the structure of this organ; for several of what are now considered to be the discoveries of Hunter, Monro, Blumenbach, and others, in its comparative anatomy, may be found here. The volume formerly belonged to Mr. Monk Mason, and was purchased at his sale by Mr. Bohn, from whom I procured it a few weeks since. It is, in all probability, a unique copy.

time and attention on the ear, was disheartened at the neglect he experienced, and in consequence relinquished it for the profession of the oculist—a third shoot from the stem of surgery, and one to which I also have for some years devoted my leisure; the fruits of which may be seen in my recent *Treatise on the Eye*. The intimate connexion which exists between the eye and ear first led me to the study of the former, and from having found, in several cases, that while prescribing only for diseases of the ear, I had unintentionally cured those of the eye at the same time. I have not the most remote intention of abandoning the ear, however successful I may be with the eye; but, having now overcome many difficulties and much opposition, as well as received lately great encouragement from the highest quarters, I am resolved to apply my best energies to both organs as long as I live.

Certain it is, that the anatomy of the ear, and its diseases, are almost unknown to general practitioners, even of eminence. Mr.

Abernethy himself told me that he did not understand the treatment of diseases of the ear; and my own father, who was a physician, and practised for upwards of fifty years, knew but little of this intricate organ, and strongly dissuaded me from attending to what he called so unsatisfactory a subject.

Much of the difficulty that has hitherto deterred medical students from its investigation is now, I am happy to say, removed; and whoever will study attentively my Treatise on the Ear, together with my Chart of the diseases to which it is liable, pointing out their order, classification, seat, symptoms, causes, and treatment, comparing the descriptions contained in these with my coloured Map of the Anatomy of the Ear, shewing its external, intermediate, and internal structure, with the bones *in situ*, and the principal nerves and blood-vessels in its immediate vicinity—may soon gain a knowledge of this organ; consequently there is no longer any excuse for medical men being ignorant of it. Still, it must ever remain

true, that only daily practice can confer that *tactus eruditus* which enables the aurist at once to ascertain the precise situation and character of disease, and can teach him how to apply such remedies as experience has shewn him are most suitable.

But a knowledge of the ear and its diseases will never be general in the profession in this country, until the Court of Examiners of the College of Surgeons insist upon an acquaintance therewith, as one of the necessary qualifications of a surgeon.

Having made these preliminary remarks, I shall now, for the information of the general reader, very briefly describe the anatomy of the ear in man.

The human ear consists of three principal divisions, viz. an external, intermediate, and internal ear. The parts of the first division are called the helix, antihelix, tragus, anti-tragus, lobe, *cavitas innominata*, *scapha*, and *concha*. In the middle of the external ear is the *meatus*. The external or outward ear is designed by nature to stand promi-



ment, and thus contribute to the symmetry of the head; but in Europe it is greatly flattened by the pressure of dress: it consists chiefly of elastic cartilage, formed into several hollows or sinuosities, all leading into each other, and finally terminating in the concha, or immediate opening into the tube of the ear. This shape is admirably adapted for receiving, collecting, and retaining sound, so that it may not pass off, or be sent too rapidly to the seat of impression.

The next division is the intermediate ear, which consists of the tympanum, mastoid cells, and Eustachian tube. The tympanum contains four small delicate bones, viz. the malleus, incus, stapes, and os orbiculare, which last is joined to the incus. The intermediate ear displays an irregular cavity, having the membrana tympani stretched across its extremity: this cavity communicates with the external air through the Eustachian tube, which leads into the fauces or throat. The membrane of the tympanum is intended to carry the vibrations of

the atmosphere, collected by the outward ear, to the chain of bones which form the peculiar mechanism of the tympanum.

The third division of the organ is the internal ear, called the labyrinth : it is divided into the vestibule, three semicircular canals, and the cochlea, the whole being incased within the petreous portion of the temporal bone. The internal ear may be considered as the actual seat of the organ : it consists of a nervous expansion, of high sensibility, the sentient extremities of which spread in every direction, and in the most minute manner inosculate with each other, forming plexuses, by which the auricular sense is increased. Here, also, sound is collected and retained by the mastoid cells and cochlea. To this apparatus is added a fluid, contained in sacs and membranes.

To man the importance of hearing is great ; for by it his harangue is heard in the senate, and his commands in the field. The parts essential to the perfect exercise of this function are :

1. An external ear : whenever this is completely removed in man, deafness is certain to ensue. 2. The membrane of the tympanum : this may be partially injured, but cannot be entirely lost, without producing deafness. 3. The stapes : all the small bones of the ear may be removed without destroying hearing ; but the stapes is the only one that prevents the escape of sound from the internal ear. 4. The aperture of the Eustachian tube ; which preserves the access of air through the throat to the tympanum. That this is a necessary part, is evident from the structure of the ear in the tortoise and frog, which have no external ear, but an enlarged Eustachian tube placed behind the roof of the mouth. 5. The presence of a fluid in the internal ear : this heightens the acuteness of impression, and renders it effectual.

The general structure of the ear resembles a cavern, its form being, as before remarked, the best adapted for the reception and transmission of sound. It was probably from a



knowledge of this fact in acoustics, that Dionysius, the Syracusan tyrant, caused a cavern to be hollowed out in a rock, in the shape of the human ear, wherein to confine his state prisoners; and by means of tubes communicating to his palace, he was thus enabled to hear their conversations, and hence obtained evidence by which either to condemn or acquit them. It is even related by classic writers, that the slightest movement or the faintest sigh of the wretched inmates of this dungeon reached the chamber of their inhuman oppressor.

The impressions received by the organ of hearing are conveyed through the medium of air, which acquires a tremulous motion or vibration from the action of the body communicating sound; and as these motions or vibrations succeed each other, sound is directed to, and impressed on, the thin membrane stretched obliquely across the auditory passage, where it produces a similar motion, and excites the sense of hearing, with a mysterious yet most efficient precision, and

with a certainty of result invariably corresponding to the consecutive causes of noise.

In all animals the ear is divided into an external and internal part; and the difference in its structure is greater internally than externally. In quadrupeds the variations are also much more marked than in the other classes of animals: but whatever differences of structure occur, the animal is thereby better fitted for its peculiar circumstances and mode of life. For, when we remember that all are the production of Infinite Wisdom, we may rest assured that even the slightest varieties of structure have their uses, and are not the result of accident. The sense of hearing is one of the most powerful helps to preservation that animals possess; since it not only foretells the approach of danger, but is also the means of effecting the reunion of individual families, and of congregating large numbers of a species for defence or migration. By it, too, they are assisted in finding their prey; and hence this faculty is wanting only

in the very lowest in the scale of animated nature.\*

The form and situation of the ear, however, as well as the delicacy and peculiarity of its structure, render it liable to injury from many causes ; and unless particular attention be paid to its preservation, it is rare that it retains its powers in any considerable degree of perfection beyond middle life. But as I do not profess to specify here all the diseases of this organ, I shall only subjoin some observations on such as are most frequent, or are otherwise remarkable.

One of the most prevalent diseases of the ear is a purulent discharge called otorrhœa. It is generally brought on by exposure to cold, and is not unfrequently the conse-

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\* Those who are interested in the instructive study of comparative anatomy will find a mass of very curious facts relative to the form, capabilities, &c. of the ear in man, quadrupeds, birds, fishes, and insects, in the last edition of my Treatise on the Physiology and Diseases of the Ear, in which work I have entered fully into the subject, and condensed much valuable information from various British and foreign sources.

quence of an attack of fever. Though it is often a serious, and always a disagreeable complaint, yet, if attended to in time, it is easily cured. It may be divided into three distinct stages: the first is simply a discharge from the ear, unaccompanied with any thing of an alarming nature; in the second form the discharge is combined with fungus or polypus; and in the third the bones are involved, which becoming carious, the disease often terminates fatally.\*

The first form yields to simple remedies; but when the discharge is long continued, degenerating into the chronic state, there may be danger in checking it too suddenly. Even in the second form, after the removal of a fungous or polypous excrescence by

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\* As further evidence how little practitioners in general know of the ear, I may mention, that a modern writer, in his *Practice of Physic*, which is certainly, as a whole, the best work of the kind in our language, recommends two drachms of pyroligneous acid in six ounces of water to be injected into the ear in this disease! It is unnecessary to state what mischief such an application would cause in case of any unsoundness of the organ.

manual interference, or local remedies adapted to the nature of the case, the application of mild and cautious means has usually been found, in my experience, to be sufficient for its removal. But the third stage is more formidable; and M. Lallemand (a celebrated professor of Montpellier) has given an alarming picture of the danger accompanying it. However mild this disease may be in the first instance, if neglected or improperly treated, it proceeds from a mucous to a purulent form, accompanied by that distinctive fetor which marks the destruction of the bones. Several fatal cases are adduced by this gentleman, shewing the importance of early attention, as well as the danger of improper treatment.

Otitis, or ear-ache, is an inflammatory affection of an exceedingly painful nature. Children frequently suffer from this disease; but most commonly it attacks persons who heat themselves by violent exercise in the open air. Like other inflammatory diseases, it assumes two forms—the acute and the



chronic, and is susceptible of those applications and modes of treatment which are employed under analogous circumstances. A strong fomentation of poppy-heads will generally afford relief; but should the disease be caused by a carious tooth, as is often the case, the tooth ought to be removed. The acute form is easily relieved by reducing the local inflammation, and increasing the action of the *primæ viæ*; but in the chronic form the cure will, of course, be comparatively tedious, though even in these cases the disease will yield to appropriate constitutional treatment.

A third and very common disease is an herpetic eruption, appearing chiefly on the external part of the ear, but not unfrequently involving the passage also. The eye likewise is sometimes affected, and even the whole head. It causes a thickening of the skin, and sometimes even a discharge from the meatus: the thickening occasionally closes the passage, and brings on deafness. This disease is very frequent among child-

ren, in whom it appears at an early age. It is also to be met with in adults, especially in such as are of a scrofulous habit. Its duration depends much upon the general health; and it may be considered rather as an annoying than a dangerous affection, though if neglected it frequently becomes serious. It is often aggravated by patients rubbing it with their hands.

Nervous deafness is a disease that attacks all classes, and is particularly prevalent among females: it assumes a variety of appearances; and though one of the most troublesome affections to which the ear is exposed, yet, if taken in time, and properly managed, it is not difficult of cure. When of long standing, however, and the ear has become habituated to mistaken impressions and false perceptions of sound, it proves exceedingly obstinate. Still, even in these cases, a knowledge of the disease, and perseverance in a right course, will effect much. In the generality of cases of nervous deafness that have come under my view, either

nothing has been attempted to be done, or what has been prescribed has not been followed up. Many persons, but especially those not dependent on labour for their support, are prone to neglect this malady. When accompanied with noise in the ears (*tinnitus aurium*) it is often indicative either of apoplexy or some other morbid affection of the brain, from which, at a certain time of life, there is always great danger of a fatal termination. In apoplectic cases, with faltering of speech and blindness, we find deafness also produced by the general affection of the head.

A disease of the auditory nerve, like that of the retina, or optic nerve, in gutta serena, is not an infrequent complaint; and I have lately treated it in several cases like amaurosis with considerable success.

The discoveries of those distinguished continental physiologists, Majendie and Manec, respecting the great sympathetic nerve, which is situated near the stomach, and the ganglionic plexus of nerves, which exerts such



a leading influence on all the organs of sense, but more particularly on the ear and eye, have tended much to elucidate nervous affections. I have myself also had the satisfaction of tracing the intimate connexion of those nerves, while dividing the semilunar ganglion and solar plexus, in the dissecting-room of King's College, which I did in the presence of Mr. Partridge, the able and scientific demonstrator of anatomy to the College. If the stomach be the centre of sympathy, as is now universally acknowledged, practitioners ought to bear in mind, that any derangement of its nerves may produce analogous affections.\*

Worms are often the cause of deafness in children, and sometimes in adults also.† In-

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\* For a description of the nerves connected with the ear and eye, see Manec's grand Plate of the Great Sympathetic Nerve, shewing its various ganglia, &c.

† A singular instance of deafness caused by worms occurred some years since. Lady ——— was extremely deaf, and her case resisted all the means I tried, as it had previously done those employed by others whom she had consulted. I was induced, therefore, to call in the late Dr. John Sims, the then consulting physician to the Royal

deed, the causes from which deafness arises are as various as the different degrees in which it occurs. Among the most prominent may be mentioned, besides those already enumerated, early neglect, scarlatina maligna, inflammation of the tympanic cavity, fever, measles, small-pox, influenza, apoplexy, epilepsy, scrofula, paralysis of the auditory nerve, scurvy, cancer, suppressed evacuations, mental affections sympathising with the stomach and bowels, hysteria, convulsions, delirium, coma, intemperance, exposure to cold, heavy discharges of artillery, &c.

Many are undoubtedly deaf from sheer negligence;—they have, according to the clever, though eccentric, Dr. Kitchiner, only hearing enough to catch the sound of the dinner-bell, and sight sufficient to find a spoon;—they are accustomed never to attend when first spoken to; but answer you

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Dispensary for Diseases of the Ear. He ordered her ladyship large doses of oil of turpentine, which removed the worms, and thereby cured the deafness.

with a “Was that you?” “Pray did you speak?” “What did you say? Eh? what? eh?” — and their idleness and inattention daily growing upon them, they become in time really deaf; not from any defect or disease, but from absolute sluggishness. With such persons it is obvious the aurist has nothing to do. They must, if they wish to hear, rouse themselves from their lethargy, and, as Virgil has it, *arrectis auribus*, listen attentively to those who address them.

Among the various causes of deafness, a very simple one is often overlooked, viz. an accumulation of inspissated or hardened cerumen.\* This accumulation takes place at the inner extremity of the meatus, and occurs at all ages, frequently from the most trivial causes. The state of the secretion at

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\* Some physiologists have contended that there is a muscle whose office it is to expel the cerumen; and I was formerly inclined to coincide with them in this opinion; but farther examination has convinced me that there is no muscle for this specific purpose, but that the wax is expelled during mastication.

the same time undergoes a considerable change; and the case is not unfrequently confounded with nervous deafness and other affections of the ear. Cases of this nature require that the ear be inspected, by which the cause of the inconvenience may often readily be detected. Having done this, relief may almost as readily be afforded, and the hearing restored. In this way persons often labour under deafness for a considerable time, entertaining an idea that they are afflicted with an incurable disease, and never imagining that so serious an evil depends on so trifling a cause.

Many persons are deaf from an obstruction of the orifice of the Eustachian tube. An easy method of knowing whether this be the case, is, to place a watch in the patient's mouth, or between his teeth. In slight cases of deafness from this cause, a gargle of Cayenne pepper and port wine will remove the obstruction.

Sea-bathing sometimes produces deafness, by first detaching and afterwards dissolving

the cerumen, which thus covering the tympanum, prevents the pulsations of air from reaching that membrane. If the ear be well syringed with water, while the wax is in that soft state, the hearing will immediately be restored.

Parents, and others who have the care of young children, should be cautioned against the too free use of cold bathing; many children having become deaf by its improper or unseasonable application, and from their not being wiped quite dry.

The effect of blows upon the head is often of the most serious nature; and schoolmasters ought to be careful not to box boys on the ear, or otherwise strike them upon the head, as deafness may be caused thereby. A case occurred at the Dispensary a few days since, in which an usher having hit a lad on the head with a ruler, deafness was the consequence.

Nursery-maids should be strictly charged never to set very young children down on the damp grass; as a cold caught at this



early period of life, before the function of speech is developed, has not infrequently been the cause of deafness, and, in consequence, of dumbness; it being evident, that neither the English nor any other language can be spoken correctly, unless the ear be able to catch all the niceties of pronunciation, accent, emphasis, &c.

The habit of frightening children is another source of injury, and very reprehensible. It is an evil, the effects of which remain a long time, sometimes till death, producing not only deafness, but epilepsy and a long train of diseases.

When parents find that children in early infancy are dull of hearing, and do not readily acquire their speech, but appear to them to be deaf and dumb,—if they have not an opportunity of consulting a medical man, I would recommend the ears to be well syringed with warm soap and water; and the external part, together with the sides of the ears, to be rubbed night and morning with a coarse linen cloth. Sir Everard

Home used to advise, in cases where children were dull of hearing, an ointment made of equal parts of hog's-lard and soft-soap to be rubbed, not only all over the ears, but on each side of the head in the vicinity of the organ. Though I do not expect much benefit from this application, yet the friction is likely to be of service, and deserves a trial.

Mothers cannot be too strongly cautioned against considering their children deaf and dumb before they are tested; it having been frequently remarked to me, that infants who heard while teething, afterwards became deaf; consequently deafness in these cases depended on functional, not structural, derangement, and the hearing they once had might have been improved. When a child is supposed to be born blind, advice is sought: why not also if suspected to be deaf and dumb?

The use of warm night-caps is a custom certainly injurious to the organ of hearing; and there can be no doubt that deafness arising from cold is very often caused by persons sleeping with the head enveloped

in flannel, and in the day-time, even in winter, going abroad with the ears completely exposed. The insufficient dress of the ladies also renders them peculiarly liable to catch cold; and hence deafness frequently ensues. In slight cases, a little eau de Cologne applied behind the ears, and cleansing them with soap and water, will generally remove the complaint. When there is violent pain in the ear, a few drops of tincture of opium in oil of almonds, in the proportion of ten drops of opium to a quarter of an ounce of oil, will often afford relief. But should these means fail, recourse must be had to other remedies, for a full account of which, see my Treatise on the Ear.

The state of the atmosphere has considerable influence on the organ of hearing; and it seldom happens that those who live in a humid or impure air possess acute audition: deafness is also much more frequent in such cases than where the air is pure and wholesome; and hence many of the poorer classes, who reside in crowded lanes and close alleys,



are dull of hearing. A highly artificial state of society, too, is not without its effect upon the ear; in fact, none who are “in city closely pent” have that quickness in perceiving sounds which is common to man in savage or even in less civilised countries. In New Spain deafness and diseases of the ear are hardly known.

There are probably more deaf persons in this country than in any other in Europe: in fact; there are but few who hear very acutely. How many, for instance, can hear the insects in the hedges, or a watch tick at the distance of twelve yards? which all ought to be able to do. We know, upon unquestionable authority, that the Calmucks have a good ear and a quick eye, and that they can discern an army or the tramping of horses at a great distance, when no sound is perceptible to our ears. Should any doubt the number of deaf persons in this country, especially among the higher ranks and those holding important situations, he will on inquiry find that not only are many of them deaf, but

that they have never had any attempt made to restore their hearing. The reason of this, I apprehend, is, that the professional men about them are, from indifference to the subject, mostly unacquainted with the ear.

Generally speaking, few diseases are more easily cured than those of the ear, if taken in an incipient stage; and few are more obstinate than these are, when confirmed by neglect or long standing. Cases of structural defect are at all times incurable; but when the derangement is merely functional, there are few instances in which an early application of proper remedial means, and a strict attention to what is directed, will not effect a cure.

Nostrums for affections of the ear are now very properly out of fashion. It cannot be denied, that some of them, by moistening the parts, and gently stimulating the passage, may have been of service; but to suppose that any of them could remove a structural defect, only shews the folly of those who expected relief from such inadequate means.

Some persons, who dispute the possibility of curing diseases of the ear, say, that as we cannot see its inside, we cannot be successful in our endeavours. But it should be remembered, that neither can the inside of the head, liver, stomach, &c. be seen, and yet diseases affecting those organs are curable. It may perhaps be urged, that by means of dissection a knowledge has been obtained of these parts: then why, I would ask, may not a knowledge of the ear be obtained in the same way? Besides, experience is as useful here as in other cases. We know that a beating noise, like the strokes of a ponderous hammer, denotes a hardened secretion; that a humming, resembling the rustling of leaves, the blowing of wind, the falling of water, &c. indicates a nervous affection, produced by internal causes, and termed paracosis, frequently a forerunner of apoplexy or some other alarming mischief, as delirium, madness,\* &c.; and so of other symptoms.

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\* It is a remarkable coincidence, which has frequently been noticed by medical writers, that almost all mad persons complain of noises in the head.

Few need to be told, that if they wish to hear well, and avoid deafness, they must guard against wet feet, thin shoes, cold currents and draughts of air, keeping on wet clothes, sleeping in damp rooms and unaired beds, going into the night air from heated apartments, living in marshy and low situations, &c. Shunning these things, those who would retain their hearing unimpaired till old age, should attend to their general health, breathe a pure air, take as much out-door exercise as they can, live on plain but nutritious food, keep the mind calm and tranquil, and be especially careful to prevent constipation of the bowels.

The intrusion of foreign bodies into the ear is of frequent occurrence. Many cases have been seen by me, in which children, while at play, have had pins, cherry-stones, and other extraneous substances, introduced into the passage. Insects also sometimes get into the ear, though, from the acridity of the cerumen, not so often (at least as regards their penetration into the inner passage) as might be imagined; and as they

are unable to extricate themselves when once involved in the exterior meatus, they occasion great inconvenience and uneasiness. In all these cases a forcible extraction of the intruding body ought to be avoided; in lieu of which I would merely recommend dropping a little sweet oil into the ear, which will instantly destroy the insects, and afterwards syringing the ear with lukewarm water will generally dislodge them.

Accidents of this kind are almost weekly brought to the Dispensary; but if the intruding body be difficult to extract, and do not occasion pain, my invariable practice is, not to interfere with it; and in no instance have I ever heard of any unpleasant consequences resulting from so doing.\*

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\* Some years ago, a young lady was brought to my house early one morning by her mother and sister, who stated that a glass bead had accidentally been forced into one of her ears. On examination, I found the parts very much lacerated and covered with blood, and was told that two surgeons had attempted to remove the bead without success. I also endeavoured to extract it; but as it was impacted at the bottom of the passage, in consequence of



The condition of the Deaf and Dumb cannot fail to affect every feeling mind acquainted with the numbers of their fellow-creatures thus doomed to pass through life deprived of the blessings of hearing and speech. And when we learn that by proper attention and examination at an early period of infancy, a large proportion of these individuals might have enjoyed the use of these faculties, our regret is increased to think that such means have not been tried. The evil seems chiefly to have arisen from supposing that all dumb children are totally deaf; an assumption utterly without foundation, and one which has been repeatedly

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the efforts that had been made to dislodge it, I did not succeed. As the young lady cried much, and her mother and sister were greatly alarmed, I proposed going to Mr. Cline, which we accordingly did. I expected that he would renew the attempt to get out the bead, but was surprised to hear him say, that as there was no pain, he should advise its being left alone. His advice was followed; and in a few days it came out of itself. Since that time I have uniformly adopted the same course, well knowing that serious consequences often ensue from violent attempts being made to extract intruding substances.

disproved in my own practice. Cases of malformation of the ear are very rare ; and, generally speaking, deafness in infants (for it is in infancy that a cure should be attempted) is caused by an obstruction of the Eustachian tube, or by some other defective condition of the function of hearing. Were all children suspected of deafness to be submitted to an early inspection by competent persons, instead of being allowed to remain deaf until nine or ten years old (whereby the disease is confirmed), and then admitted into an asylum and treated as incurably deaf, the result would be very different, and many be rendered useful members of society, who, under the present system, are objects of commiseration as long as they live.

These remarks are made, not from ill-will towards any men or body of men ; but merely from a desire that the subject may meet with that candid examination and strict scrutiny which its importance deserves. So long ago as January 11th, 1817, I submitted a plan to the Committee and

Governors of the Deaf and Dumb Asylum,\* which was, that an aurist by profession should be appointed to inspect all infants previous to their admission into that Asylum; and that, where no structural derangement was discovered, a plan of treatment should be immediately commenced, having for its object the restoration of the faculty of hearing, which being obtained, speech would naturally follow.

At the time I thus wrote I had good grounds for what I said; but since then the evidence of the accuracy of my views has been considerably increased. Several cases of infant deafness and dumbness have come under my care, as Surgeon to the Royal Dispensary for Diseases of the Ear; and by adopting the means above suggested, I have the happiness to know that these poor children have been restored to their hearing, and, as a consequence, to their speech likewise.

The number of persons born deaf and

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\* Vide the letter in my Essay on the Deaf and Dumb.



dumb far exceeds what is generally supposed.\* My opinion, that malformation of the organ is comparatively infrequent, has, I rejoice to see, received the support of the distinguished M. Itard, who, in a memoir to the Minister of the Interior, states that absolute deafness is comparatively rare; not above one-fifth of the cases of deafness and dumbness that have come before him, presenting a state of total deprivation of hear-

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\* A circular issued by the Institut Royal de Surds-muets de Paris shews, that in France, with a population of 23,000,000, there are 20,189 deaf and dumb, *i. e.* one in every 1585; in Russia, one in 1584; in America, one in 1556; for all Europe the proportion is as high as one in 1537: so that here is ample scope for institutions of this nature. Those at present existing are inadequate for the admission of all, or even a large portion of congenital cases of deafness and dumbness; it being a well-attested fact, that three, four, five, and in some instances even seven, children in one family are so afflicted. According to a Report of the London Deaf and Dumb Asylum, it appears that a list of 64 candidates was presented to the governors, out of which they were under the painful necessity of electing only 21, though all seemed to have powerful, if not equal, claims on their notice. By the same Report it will be seen, that in seventeen families, containing 136 children, there are no fewer than 78 deaf and dumb.

ing ; for it is a fact, that some of the children in the asylums can hear a little with one ear—consequently, with proper remedies, that little might be improved. It is full time, therefore, that something effectual were done for this class of sufferers ; and I am happy to state, that the benevolent Patrons and Governors of the Royal Dispensary for Diseases of the Ear have in contemplation such an enlargement of the present building as will enable them to admit infant deaf and dumb children within its walls,\* when an early examination of patients, and a course of constitutional treatment suited to the various cases, will be entered upon, from which I

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\* The Editor of the Metropolitan, after remarking, that “there should be a building erected for the reception of juvenile cases,” adds: “if we do not shortly find a well-endowed hospital established for the cure of the deaf and dumb, we shall blush for the ill-timed parsimony, or the misdirected liberality of our countrymen. It is to this point that Mr. Curtis, with so much talent and industry, is endeavouring to bring the public: and surely such exertions demand not only encouragement, but gratitude, from all classes of his countrymen.”

confidently anticipate the most cheering results.

Before closing this part of my subject, I beg to subjoin a few remarks on the Royal Dispensary for Diseases of the Ear, of which I had the honour to be the founder. When I first made known my intention of establishing such an institution, I was told that there were not in the metropolis enow cases of deafness, and other diseases of the ear, to render such an attempt necessary; which, indeed, for some time, from the few applications, and still fewer subscriptions, I almost thought must be the fact; and had it not been for the persuasion of the venerable Archdeacon Bowyer, whom I had the happiness to relieve about that period, I believe I should have abandoned my purpose. The Dispensary has now, however, stood the test of nearly twenty years; having cured or relieved upwards of 8720 patients. Sometimes as many as 96 persons have received advice and assistance in one day; and it is a source of the highest satisfaction to

me to know that, out of so many applicants, not one has ever been made worse by the treatment employed; but that the majority have been enabled to return to their various avocations, for which they were before incompetent.\*

Mild and gentle means are those invariably adopted at the Dispensary; for I am convinced that nothing has tended more to weaken the confidence of the public in some of our best institutions for the relief of the afflicted poor, than the performance of bold and dangerous operations.

This institution was not brought to its present condition without unwearied exertion and unceasing perseverance: for the first six years of its existence, I was never absent a single day.

Many noblemen and gentlemen, patrons

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\* It is remarkable, that deaf persons are generally low-spirited and depressed; while the blind, on the contrary, are usually cheerful: the former brood over their misfortune hopelessly—the latter confidently anticipate relief.—For a true picture of a miserable deaf man, see Beethoven's Will, in the Musical Library for July last.

of the Dispensary, have lately visited it; some of whom have remained upwards of two hours, in order to be the better able to judge for themselves of its utility. Among these may be mentioned, Earl Harewood, Earl Tankerville, the Bishop of Derry, as well as several of the most distinguished members of the medical profession.

The interesting science of acoustics presents too wide a field to be entered on here; I shall therefore proceed to describe some inventions for the assistance of the incurably deaf.

As being the latest contrivance of the kind, I shall first introduce my acoustic chair, which is an improved application of the principles of the apparatus called the invisible girl. The intention of this chair is, to enable a deaf person, seated in it, to hear and join in conversation, without inconvenience or effort;—and by means of additional tubes, carried to other rooms, he might also hear whatever transpires in them.



One of its great advantages consists in this, that the person sitting in it hears at the opposite side to that at which he is addressed; thus avoiding the unpleasant and injurious practice of the speaker coming so close as to render his breath offensive, and probably cause a relaxation of the membrane of the tympanum. This is an effect commonly produced by the use of flexible tubes, no less than by hearing-trumpets, which are as often employed for speaking through, as for hearing with; and it is a certain fact, that many persons, after having used a trumpet for half an hour, are for a time quite deaf, from this cause alone.

This invention is of the size of a large library chair, with a high back, to which are affixed two barrels for sound, and at the extremity of each is a perforated plate, that collects sound, into a paraboloid vase, from every part of the room, and impresses it more sensibly on the ear, by giving it only a small quantity of air. The converse end of the vase serves to reflect the voice, and to



render it more distinct. By means of sufficient tubes, this chair might be made to convey intelligence from St. James's to the Houses of Lords and Commons, and even from London to the King at Windsor. Marvellous as this may seem, the idea is not a novelty; it is but another confirmation of the saying of Solomon, that there is nothing new under the sun. M. Itard, in his excellent work on the ear, tells us that Aristotle (who was physician to Alexander the Great) invented a trumpet for his master which was capable of conveying orders to his generals at the distance of 100 stadia, equal to rather more than twelve miles. And I may remark, bearing in mind, too, that both Alcmeon and Hippocrates are said to have invented ear-trumpets, that the ancients do not seem to have been so ignorant of acoustics as some in our day have represented them.

Another invention of mine is a trumpet with two apertures, one to be inserted into the meatus, and the other into the mouth;

by which a twofold advantage is gained, the deaf person receiving sounds at the same time both by the external auditory passage and by the Eustachian tubes. The idea was first suggested to me by my friend Sir Edward Stracey, Bart., to whom I am under many obligations.

A curious little tin trumpet, which can be held in the hand without being observed, was invented by Don Consul Jovis at Cadiz. One of these was given me by a Spanish gentleman whom I relieved. In some cases it is found to be of considerable benefit; but still I must, once for all, assure my readers, that it is useless ever to expect to hear so well with a short trumpet, however excellent, as with a long one. Hence it is that persons are generally so little satisfied with trumpets: they expect one not longer than the meatus to enable them to hear as well as if it were two feet in length. The thing is impossible: and it cannot be too plainly stated, that the longer the trumpet, the greater will be its power—it is with it just

as with the lever in mechanics. The trumpet I use for examining deaf and dumb patients is about eight feet long.

I have also invented a hearing-trumpet,\* forming a parabolic conoid. It is of a very convenient construction, and shuts up into a small case for the pocket.

When at Amsterdam, a few years since, I was struck with the appearance of some very ingenious small acoustic tubes, about three quarters of an inch long, which, on being inserted into the meatus, increased the collection of sound: but except in slight cases, they could, for the reasons just given, be of little service.

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\* On the subject of ear-trumpets the following is curious: Major G., an old officer, being very deaf, purchased an expensive trumpet; but unfortunately derived very little benefit from it. Going, however, to see a friend in the country, who happened also to be deaf, Major G.'s trumpet was tried by him, and found to answer admirably: whereupon he remembered that he had an old tin one, with which he had never been able to hear, but which he now thought might perhaps suit Major G. It was brought, and proving to be exactly what the Major wanted, an exchange was immediately made.

I was also shewn, when in Paris, a short while ago, a very curious instrument, which would enable a person sitting in the farthest part of a theatre, both to hear and see the performers distinctly at the same time. It might probably be convenient, if only occasionally employed; but its frequent use would certainly prove highly injurious to the ear and eye.

One invention is often the parent of another, and thus it has been with the ear-trumpet. As, by its constant use, and sometimes from other causes, the membrane of the tympanum is often compressed, I was induced to try what I could do to relieve it; and accordingly procured a large caoutchouc bottle, to which I had fitted an ivory top capable of entirely covering the external ear, and which thus acting as an air-pump, I have found very effectual in drawing out the membrane of the tympanum, and thereby improving, and in some cases even restoring the hearing: in *tinnitus aurium* I have also employed it with great success. It is very

simple in its application, produces no pain, and in careful hands cannot do any injury.

Another invention is the French artificial ears, which, by fitting closely to the ear, increase the collection of sound, and resemble the natural ear in appearance.

In some cases the ears made of shells are serviceable; in others the German silver ears answer best: the latter are, however, objected to by many on account of their weight, and from being more conspicuous than the French ears: they also require to be fixed by a spring, which goes over the head.

I might enumerate many other instruments which are in my possession, some of them of complex construction, and others of a more simple kind; but those noticed are the most important.\*

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\* A model of my Acoustic Chair, my improved Hearing Trumpets, Artificial Ears, &c., as well as a metal cast of the Internal Ear, and large bronze casts of its Small Bones, together with an Artificial Eye, composed of ivory and glass, may be seen at the National Gallery of Practical Science in Adelaide Street.



On the choice, use, and abuse of ear-trumpets, a few remarks remain.

1. Of their choice. It is impossible to lay down rules applicable generally for the choice of ear-trumpets—what will suit one person exactly is utterly useless to another; and therefore I would here advise, as I have before done with regard to spectacles, that those who require a trumpet should try several: still, there are cases of structural defect in which no trumpet can be of any use. To those who wish to hear well, and who disregard the appearance of the trumpet (which, by the by, seems to be the *cruæ surdorum*), I would recommend the tin trumpet with two apertures, in preference to all others; especially for those who hear best with their mouth open, or in a carriage. The cheapest, and even the most unsightly, trumpets are often the best; and a common tin\* one, of the value of half-a-crown, collects more sound, and renders the hearing more acute, than

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\* As pebble is the best material for spectacles, so, in my opinion, is tin the best for ear-trumpets.



the German silver ears, which cannot be obtained, if properly made, under £25 : they may, it is true, be worn under a cap or wig without being seen.

2. Of their use. Those who are obliged to have recourse to a trumpet, should begin with one of a moderate degree of power, and use it as sparingly as possible, never employing it when they can do without it; for the less a trumpet is used, *i. e.* the more rest that is given to the ear at a time, the better and longer will it answer the purpose.

3. Of their abuse. Ear-trumpets are intended for those who would otherwise be unable to hear at all; yet we often see persons using them, who, if they were to exert themselves a little, would be able to hear without them. This may be considered as an abuse of them; and such persons should recollect, that trumpets act on the ear as glasses do on the eye. Many have injured their hearing by improper trumpets; and, in like manner, many have hurt their sight by unsuitable glasses.

In conclusion I have only to add, that my Treatise on the Ear, from which these Observations are chiefly drawn, and to which I beg to refer the reader who may be desirous of further information, has, with others of my works, been translated into various foreign languages. The plan of treatment pursued at the Dispensary is fully described in my Treatise; and I have the satisfaction of finding, that it has thereby become known and been successfully adopted not only in this country, but also in France, Italy, Germany, and America.

FINIS.

LONDON:

ROBSON AND CO. 46, ST. MARTIN'S LANE.

# ROYAL DISPENSARY

FOR

## Diseases of the Ear and the Deaf and Dumb,

No. 10, DEAN STREET, SOHO SQUARE.

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OF the medical institutions of the metropolis for benevolent purposes, no one has a more powerful claim to public attention than the Royal Dispensary for curing Diseases of the Ear; since,

in all ages, the forlorn state of the Deaf and Dumb has excited the sympathy of the compassionate and humane. It has been wisely remarked, that "knowledge is power;" and from the intimate connexion of the faculties of hearing and speech, it is now universally acknowledged, that when deafness occurs in early infancy, dumbness always follows. Yet it is a fact of peculiar interest, that many cases of deafness and dumbness admit of relief when subjected to an early examination and proper mode of treatment.

In consequence of the great success which has crowned the exertions of the Royal Dispensary, it was resolved, at a late meeting of the Governors, still further to extend its sphere of usefulness, by enlarging the present building, in order to receive within its walls not only deaf and dumb patients, but also persons from the country afflicted with deafness or other diseases of the ear who are destitute of a habitation.

*Such patients as require acoustic instruments are supplied with them gratuitously.*

Every Subscriber of one guinea per annum is entitled to one patient always on the books; two guineas entitle to two patients, and so in proportion; ten guineas constitute a life-governor.


*Accidents, and also cases of deaf and dumb, are admitted without letters of recommendation.*

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Subscriptions are received at the Banking-houses of Sir William Curtis, Bart., and Co., Lombard Street; Messrs. Barclay and Co., Lombard Street; Messrs. Hammersley and Co., Pall Mall; W. Cobbe, Esq., No. 31, Regent Street, Piccadilly; Henry Sheppard Smyth, Esq., at the Dispensary; and by J. H. Curtis, Esq., Surgeon to the Institution, No. 2, Soho Square.

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\* \* \* By the last Report of this Institution (May 1834), it appears, that since its establishment in 1816, upwards of 8720 patients have been cured or relieved, including several cases of deafness and dumbness.

 *The benevolent views of this Charity are not confined to the inhabitants of the metropolis, but extend to every individual.*